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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/787,299	05/21/2001	Tadashi Takano	SIMTEK6241	8159
25776	7590	08/23/2004	EXAMINER	
ERNEST A. BEUTLER, ATTORNEY AT LAW 10 RUE MARSEILLE NEWPORT BEACH, CA 92660			LE, DANG D	
			ART UNIT	PAPER NUMBER
			2834	

DATE MAILED: 08/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/787,299

Applicant(s)

TAKANO, TADASHI

Examiner

Dang D Le

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_. 6) ☒ Other: DECISION on PETITION

## **DETAILED ACTION**

### ***Response to Arguments***

1. In view of the petition filed on 12/02/2003, PROSECUTION IS HEREBY REOPENED. New grounds of rejection set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

- (1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,
- (2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

2. Applicant's arguments filed in the Appeal Brief on 12/23/2002 have been fully considered but they are not persuasive.

The examiner would like to present some well-known facts in the art of motor and generator regarding windings before answering all arguments made by the applicant. In the art of motor and generator, it has been known that the stator windings can be made with twisted bundles of small wires for various purposes. See Grundl et al. (5,723,933), column 4, lines 11-16; Short (587,764), Figures 1-4 and page 1, lines 40-54; Lauckert (389,752), Figures 1-3; and Fuji et al. (JP 10-174329), Figures 1-2. Inherently, the term "stranded cables" or "stranded wires" implies twisted bundles of wires.

The Merriam Webster's Collegiate Dictionary defines that "strand: fibers of filaments twisted, plaited or laid parallel to form a unit **for further twisting** or plaiting into yarn . . ." Therefore, "stranded wires" means parallel wires being twisted together.

Consequently, the stranded wires (6) of Andrus are not merely parallel strands. Instead, they are twisted strands of wires.

In addition, the stator can be made with iron poles or teeth called iron cores wound with wires or with bobbins, empty space, or grooves wound with wires called air cores. As a result, "cores" can be understood as iron cores or air cores. See Grundl et al. listed above, column 1, lines 53-55.

If claim 1 of the present application were to be allowed as recited in the amendment dated 5/1/2002, the Grundl et al. patent would have been infringed because the term "cores" cover both "iron cores" and "air cores". In other words, had the applicant amended claim 1 to replace the word "cores" with "iron cores", the examiner would have at least had to withdraw the rejection of claim 1 as being anticipated by Grundl et al.

The examiner would also like to make a note that during examination, claims must be given their broadest reasonable interpretation and the pending claims in this application broadly recite "cores". Therefore, the term "cores" in claim 1 is understood in this art as either iron cores or air cores.

Moreover, even if "the applicant's invention relates to a method of winding a coil upon core tooth elements", the claims are apparatus claims which must be distinguished from the prior art in terms of structure. In the claims, "core tooth

Art Unit: 2834

elements” are not recited. The examiner does not agree with the applicant that “the Grundl et al. reference . . . does not have the flexibility to permit winding around a core” and that “the rigid wires are bent into coil shape.” In fact, the stator coils of Grundl et al. are not “rigid”. They comprise “a number of thin filaments, being individual insulated, being arranged twisted within the strand” (see Abstract, lines 14-15), and are flexible because they can be “wound into a specific form” (see column 16, line 3).

Before the winding of Grundl et al. is made rigid, it is “a relatively flexible winding that can be easily wound around a core” which is an air space. As the examiner admitted in the rejection, the core of Grundl et al is not iron core with poles or teeth. Nevertheless, the language in instant claim 1 of the applicant reads on the structure of Grundl et al. because claim 1 does not particularly point out and distinctly claim the subject matter presented in the Brief.

The Appellant’s invention is no more than twisted strands of wires around stator core. However, it is well known in the art of motor and generator that twisted strands of wires can be used for the purpose of increasing power density as discussed in Grundl et al.; for the purpose of improving space factor as shown in Fuji et al.; or for the purpose of reducing eddy current as taught by Short.

Regarding Appellant’s argument of claims 5 and 6, Grundl et al. clearly show the twisted strands of wires (39) being encircled with an insulating coating. Please, see Figure 2 and column 5, lines 50-55.

Regarding the Appellant’s argument of claims 2 and 3, it is well known in the art of motor and generator to utilize and mount an encoder either inside or outside the

Art Unit: 2834

motor housing for the purpose of controlling the motor operation. Please see Kim, Figure 3 and Tolmie, Jr., Figure 2. In addition, although Grundl et al. do not “teach anything about how electrical current is transmitted to or from the windings,” it is well known in the art of motor and generator that mechanical energy can be converted into electrical energy and vice versa (i.e. making either a generator or a motor because a motor by definition converts one form of energy to another.) Therefore, it would have been obvious to one having ordinary skill in the art to make the machine of Grundl et al. as a motor as taught as Tolmie, Jr. or Kim.

Grundl et al. clearly teach a stator core made of twisted strands of wires. As discussed above, the winding of Andrus comprises twisted strands of wires (6). The Takahashi et al. reference is applied for showing the permanent magnet rotor (10) with magnets (11). The examiner does not rely on Takahashi et al. for twisted strands of wires and iron stator core.

Moreover, it is noted that references may be combined although none of them explicitly suggests combining one with the other within the meaning of 35 USC 103. In re Nilssen, 7 USPQ2d 1500 (Fed. Cir. 1989).

As a result, the rejection of claims 1-6 made in the Office Action dated 11/08/2002 is still deemed proper and repeated hereinafter.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 2834

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 and 4-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Grundl et al.

Regarding claim 1, Grundl et al. show a rotary electric apparatus (Figure 1) comprising a first element (50) having a permanent magnet (54), and a second element (30) with magnet wires (38) wound around cores (grooves 49, air cores), said first and said second elements being supported for relative rotation, said magnet wires (38) comprising plural enameled wires (39, column 16, line 4) twisted together (column 5, lines 1-20) to form a stranded cable (38, column 16, line 3) that is subsequently wound around said cores.

Regarding claim 4, it is noted that Grundl et al. also show outlet wires (Figure 2, ends of wires 39) constituted as stranded wires associated with the magnet wires.

Regarding claim 5, it is noted that Grundl et al. also show an insulating coating encircling the enameled wires and the strand thereof for further retaining the stranded wires in position after the winding (column 5, lines 49-55).

Regarding claim 6, it is noted that Grundl et al. also show the insulating coating comprising a plastic material (resin, column 5, line 52).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Grundl et al. in view of Tolmie, Jr.

Regarding claim 2, Grundl et al. show all of the limitations of the claimed invention including the first and said second elements placed within a casing (10, 11), the first element comprising a rotor (50) supported for rotation with said casing (10, 11), said second element comprising a stator (30) fixed to said casing. Grundl et al. do not show an encoder for acquiring control signals provided on the outside of said casing.

Tolmie, Jr. shows an encoder (36, Figure 2) for acquiring control signals provided on the outside of said casing (17) for the purpose of controlling the motor operation.

Since Grundl et al. and Tolmie, Jr. are all from the same field of endeavor, the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide an encoder for acquiring control signals on the outside of said casing as taught by Tolmie, Jr. for the purpose discussed above.

7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Grundl et al. in view of Kim.

Regarding claim 3, Grundl et al. show all of the limitations of the claimed invention including the first and said second elements placed within a casing (10, 11), the first element comprising a rotor (50) supported for rotation with said casing (10, 11),



said second element comprising a stator (30) fixed to said casing. Grundl et al. do not show an encoder for acquiring control signals is provided on the inside of said casing.

Kim shows an encoder (100) for acquiring control signals is provided on the inside of said casing for the purpose of controlling the motor operation.

Since Grundl et al. and Kim are all from the same field of endeavor, the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide an encoder for acquiring control signals on the inside of said casing as taught by Kim for the purpose discussed above.

8. Claims 1 and 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andrus in view of Takahashi et al.

Regarding claim 1, Andrus shows a rotary electric apparatus (Figure 7) comprising a first element (rotor not shown) and a second element (1) with magnet wires (3, 4) wound around cores, said first and said second elements being supported for relative rotation (column 1, line 4), said magnet wires (4) comprising plural enameled wires (6) twisted together to form a stranded cable that is subsequently wound around said cores (Figure 7).

Andrus does not show the first element having a permanent magnet.

For the purpose of making a permanent magnet rotor, Takahashi et al. show the first element (10, Figure 6) having a permanent magnet (11).

Since Andrus and Takahashi et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to make the rotor as a permanent magnet rotor as taught by Takahashi et al. for the purpose discussed above.

Regarding claim 4, it is noted that Andrus also shows outlet wires (4) constituted as stranded wires associated with the magnet wires.

Regarding claim 5, it is noted that Andrus also shows an insulating coating encircling the enameled wires and the strand thereof for further retaining the stranded wires in position after the winding (8).

Regarding claim 6, it is noted that Andrus also shows the insulating coating comprising a plastic material (column 2, line 38).

9. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Andrus in view of Takahashi et al. as applied to claim 1 above, and further in view of Tolmie, Jr.

Regarding claim 2, the motor of Andrus modified by Takahashi et al. shows all of the limitations of the claimed invention including the first and said second elements placed within a casing (7), the first element comprising a rotor (10) supported for rotation with said casing (7), said second element comprising a stator (8) fixed to said casing except for an encoder for acquiring control signals provided on the outside of said casing.

Tolmie, Jr. shows an encoder (36, Figure 2) for acquiring control signals provided on the outside of said casing (17) for the purpose of controlling the motor operation.

Since Andrus, Takahashi et al. and Tolmie, Jr. are all from the same field of endeavor, the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide an encoder for acquiring control signals on the outside of said casing as taught by Tolmie, Jr. for the purpose discussed above.

10. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Andrus in view of Takahashi et al. as applied to claim 1 above, and further in view of Kim.

Regarding claim 3, the motor of Andrus modified by Takahashi et al. shows all of the limitations of the claimed invention including the first and said second elements placed within a casing (7), the first element comprising a rotor (10) supported for rotation with said casing (7), said second element comprising a stator (8) fixed to said casing except for an encoder for acquiring control signals is provided on the inside of said casing.

Kim shows an encoder (100) for acquiring control signals is provided on the inside of said casing for the purpose of controlling the motor operation.

Since Andrus, Takahashi et al. and Kim are all from the same field of endeavor, the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide an encoder for acquiring control signals on the inside of said casing as taught by Kim for the purpose discussed above.

11. Claims 1 and 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuji et al. (JP 10-174329) in view of Grundl et al. (5,723,933)

Regarding claim 1, Fuji et al. show a rotary electric apparatus (motor in title) comprising a first element (rotor not shown), and a second element (stator 14) with magnet wires (10) wound around cores (20), said first and said second elements being supported for relative rotation, said magnet wires (10) comprising plural wires (12) twisted together to form a stranded cable that is subsequently wound around said cores.

Fuji et al. do not show the first element being a permanent magnet rotor and the wires being enameled.

Grundl et al. teach that the first element being a permanent magnet rotor and the wires being individually insulated for the purpose of making a permanent magnet rotor motor and reducing eddy current.

Since Fuji et al. and Grundl et al. are all from the same field of endeavor, the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to make the first element as a permanent magnet rotor and to insulate the wires individually as taught by Grundl et al. for the purpose discussed above.

Regarding claim 4, it is noted that Grundl et al. also show outlet wires (Figure 2, ends of wires 39) constituted as stranded wires associated with the magnet wires.

Regarding claim 5, it is noted that Grundl et al. also show an insulating coating encircling the enameled wires and the strand thereof for further retaining the stranded wires in position after the winding (column 5, lines 49-55).

Regarding claim 6, it is noted that Grundl et al. also show the insulating coating comprising a plastic material (resin, column 5, line 52).

***Information on How to Contact USPTO***

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dang D Le whose telephone number is (703) 305-0156. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

~~1/19/04~~

6/18/04

A handwritten signature in black ink, appearing to read 'Dang D. Le', written in a cursive style.

**DANG LE  
PRIMARY EXAMINER**